

AMENDMENTS TO THE SPECIFICATION

Please replace the third paragraph on page 2 that concludes on page 3 with the following paragraph:

The enzyme and the amino acid with hydrophilic character (YNH_2) are dissolved in an aqueous buffer. A certain volume of this solution is added to a mixture of organic solvents (alkane~~alane~~ plus alcohol) containing a surfactant. Alkanes~~Alanes~~ such as heptane, isoctane or octane, alcohols such as hexanol, octanol or dodecanol and surfactants such as dodecyl-trimethyl ammonium bromide, tetradecyl-trimethyl ammonium bromide or hexadecyl-trimethyl ammonium bromide can be used. This mixture is stirred until the complete solubilization~~solutibilisation~~ of the aqueous solution in the organic solvent, under the form of microscopic spherical structures termed reversed micelles.

Please replace the first full paragraph on page 3 with the following paragraph:

The second amino acid, with a hydrophobic character (AcXOEt) is dissolved in the same mixture of organic solvents (alkane~~alane~~ plus alcohol). The synthesis reaction starts when the solutions containing the two amino acids are added in a reactor (in batch or continuous mode). The same reaction also occurs in the absence of the enzyme, but at a much lower rate. Two secondary products are formed together with the dipeptide (see scheme): a) a product (AcXOH) which results from the hydrolysis of the amino acid derivative AcXOEt , b) a product (AcXOR) which results from the transesterification reaction of the same amino acid derivative (AcXOEt) with one of the solvents (the alcohol ROH).

Please replace the second full paragraph on page 3 that concludes on page 4 with the following paragraph:

The composition of the media of reversed micelles in organic solvents (type and concentration of surfactant, alkanealane, alcohol and buffer; concentration of water and enzyme), is controlled in such a way that: a) the side reactions which originate the secondary products are minimized, b) the rate and yield of synthesis of dipeptide AcX_YNH₂ are maximized, c) the solubility of the produced dipeptides is minimized. This composition may vary as a function of the specific dipeptide that is being produced. Examples of the products covered by the invention are:

N-acetyl-L-phenylalanine leucinamide (AcPheLeuNH₂), N-acetyl-L-phenylalanine isoleucinamide (AcPhelleNH₂), N-acetyl-L-phenylalanine valinamide (AcPheValNH₂), N-acetyl-L-phenylalanine alaninamide (AcPheAlaNH₂), N-acetyl-L-phenylalanine phenylalaninamide (AcPhePheNH₂), N-acetyl-L-phenylalanine methioninamide (AcPheMetNH₂), N-acetyl-L-tyrosine leucinamide (AcTyrLeuNH₂), N-acetyl-L-tyrosine isoleucinamide (AcTyrIleNH₂), N-acetyl-L-tyrosine valinamide (AcTyrValNH₂), N-acetyl-L-tyrosine methioninamide (AcTyrMetNH₂), N-acetyl-L-tryptofan leucinamide (AcTrpLeuNH₂), N-acetyl-L-tryptofan isoleucinamide (AcTrpIleNH₂), N-acetyl-L-tryptofan valinamide (AcTrpValNH₂).